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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,413	02/12/2001	Koji Wakayama	501.39600X00	8507
20457	7590	08/11/2004		
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-9889				
			EXAMINER ALEXANDER, JESSE NELSON	
			ART UNIT 2666	PAPER NUMBER 3

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/780,413

Applicant(s)

WAKAYAMA ET AL.

Examiner

Jesse N Alexander

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/21/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: **502, 511, 512, 513, 514-2, 523, 521-4, 531-1, 531-4, 531-6, 532, 7-1, 7-2, 4-B, 4-C**. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 13 is objected to because of the following informalities: **the claim recites "packet transfer device" in the first line and "packet device" in lines 14 and 15. The second limitation should be changed to "packet transfer device"**. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1 through 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- **Regarding claims 1 and 5, they recite in the seventh paragraph:**

“memory that stores the header transformation information that shows the correspondence between a pair of the information in said layer 2 header and the information in said layer 3 header, and the information in said MPLS header;” It is unclear which of the three types of header information constitute the pair of corresponding information.

- **Claim 2 depends on claim 1.**
- **Claim 3 depends on claim 2.**

Regarding claims 4 and 8, the use of the word “either” in lines 9 and 11 renders the claim indefinite because it is unclear which of the four possible combinations comprise the invention.

- **Claim 6 depends on claim 5.**
- **Claim 7 depends on claim 6.**
- **Claim 9 depends on claim 8.**
- **Claim 10 depends on claim 8.**
- **Claim 11 depends on claim 6.**
- **Claim 12 depends on claim 6.**

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Madour et al. (US 6611532 B1).

Regarding claims 1 and 5, Madour et al. teaches an a packet transfer device (fig. 9, element 914) that interworks an MPLS network which uses multiprotocol label switching, and a network that does not use said MPLS protocol (SS7 domain 910 in fig. 9), wherein:

in said MPLS network, packet switching is performed by the MPLS header which is added before the header of the layer corresponding to layer 3 of the Open System Interconnection (OSI) model **(Fig. 4, element 410 "shim" header between link (layer 2) and Network (layer 3) layers.); and**

in a network which does not use said MPLS protocol, packet switching is performed by the header of the layer corresponding to layer 2 of the OSI model (hereinafter referred to as "layer 2 header"), which is different from said MPLS header and is added before said layer 3 header, **(fig. 3, the second MTP 320 is analogous to the OSI data link layer (layer 2), and the third MTP 330 is analogous to the OSI network layer (layer 3).)**

wherein said device comprising:

a first physical port which receives a packet that is transmitted from a network which does not use said MPLS protocol (or transmitted from said MPLS network) **(fig. 13, element 1320, marked IF0)**

a second physical port for connecting with said MPLS network (or for connecting with said MPLS network) (**fig. 13, element 1320 (ports marked IF1 or IF2)**);

memory that stores the header transformation information that shows the correspondence between a pair of the information in said layer 2 header and the information in said layer 3 header, and the information in said MPLS header; (**col. 7, lines 34-40 discuss via figures 10 and 11 the construction of a table the relates the SS7 network layer 3 and 2 headers with the MPLS header. Such a table would inherently require a memory of some type**) and;

a processor that searches said header transformation information and transforms said layer 2 header contained in a packet received from said first physical port to said MPLS header corresponding to it. (**The STP/LSR in Fig. 9, element 914 is a processor (col. 7, line 9-13) responsible for mapping or transforming the labels of the incoming packets to SS7 node addresses. (see also col. 7, lines 8-10).**

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madour et al. (US 6611532 B1) in view of Sakamoto et al. (US 6633571 B1).

Regarding claim 2 and 6, Madour et al. teaches the packet transfer device recited in claim 1, wherein:

the information in said MPLS header is the label value in said MPLS header. **(fig. 5, element 510)**

Madour et al. fails to explicitly teach that the information in said layer 2 header is the information that identifies the groups to which the transmission source and destination of a packet that is transmitted from a network which does not use said MPLS protocol belong;

However, Sakamoto et al. teaches in **Fig. 7** that the information in said layer 2 header **(the VPN header or IP capsule, element 104b)** identifies the group of source and designation LANs that comprise a **(elements 1-3 through 1-4)** VPN that a packet belongs to.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Madour et al. packet transfer device with the teachings of Sakamoto et al. such that more than one private network could be supported across diverse networks.

The motivation would have been to support the tunneling of packets across diverse networks as Sakamoto et al. teaches.

Regarding claim 13, Madour et al. teaches a packet transfer control method in a packet transfer device that interworks an MPLS network which uses multiprotocol label switching and a network that does not use said MPLS protocol **(the method of apparatus shown in fig. 13, element 914)**, wherein:

in said MPLS network, packet switching is performed by the label in the MPLS header which is added before the header of the layer corresponding to layer 3 of the Open System interconnection (OSI) model (**figures 10 and 11**)

in a network which does not use said MPLS protocol, packet switching is performed by the header of the layer corresponding to layer 2 of the OSI model (**fig. 3, the second MTP 320 is analogous to the OSI data link layer (layer 2)**), which is different from said MPLS header and is added before said layer 3 header; (**the third MTP 330 is analogous to the OSI network layer (layer 3). See also fig. 10**)

wherein said method comprising the steps of:

setting the correspondence between said identifier and said label in said packet device (**fig. 10, elements 630A and 635**)

determining said label to be added to said received packet; (**fig. 11, element 630a**)

determining said identifier to be associated to said label added to said received packet in said MPLS network; (**fig. 11, "FEC to LABEL MAPPING"**)

and determining to which network among said plurality of logical networks said received packet is to be transmitted from said MPLS network. (**col. 9, lines 13-15.**)

Madour et al. fails to explicitly teach the method comprising the steps of

- and a plurality of logical networks that are identified by the identifier in said layer 2 header are configured in the network which does not use said MPLS protocol

- determining to which network among said plurality of logical networks a received packet belongs, using said identifier in said layer 2 header that is added to the received packet, when the packet is received from the network which does not use said MPLS protocol,
- checking said correspondence (between identifier in layer 2 header and label);
- checking said correspondence when the packet is received from said MPLS network;

However, Sakamoto et al. teaches

- a plurality of virtual private networks in **fig. 2, elements 2-1 and 2-2**
- in **fig. 10, element 264** and **fig. 7, element 104b** that virtual private networks (that do not use MPLS protocol) are identified by a Virtual Private Network identifier (layer 2) capsule header.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the network of Madour et al. to comprise a plurality of logical networks identified by layer 2 identifiers as taught by Sakamoto et al.

The motivation for said combination would have been to support VPNs (Virtual Private Networks) over a plurality networks each of which is managed by different Internet Service Providers (ISP) as described in Sakamoto et al.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the processor of Madour et al. (**fig. 9**,

element 914) to include the ability to check said correspondence between the identifier in layer 2 header and MPLS label.

The motivation for this combination would have been given that said processor already stores the Madour et al. routing table (**fig. 13, elements 1355, 1315, 1345, 1375.**), the processor would have check the inbound packet addresses against entries in the table during normal router operation.

Allowable Subject Matter

9. Claim 19 is allowed.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claim 19 is allowable over the prior art of record because the cited references taken individually or in combination fail to disclose a method comprising the steps of:

setting the correspondence between the value to be set to the 802.1Q VLAN ID field in said VLAN packet header and the label in said MPLS header;
and setting the correspondence between the value to be set to the user priority field in said VLAN packet header and said priority information in said MPLS header.

It is noted that the closest prior art, 6,526,056 B1 and 6,339,595 B1 Rekhter et al., both mention 802.1Q compliant packets; however, neither discloses the method of setting correspondence between priority information in the VLAN packet header and priority fields in the MPLS header.

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11. Claims 3, 4 and 7 through 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 14 through 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- 6,526,056 B1 and 6,339,595 B1 Rekhter et al.
- Le Faucheur, F.; **IETF Multiprotocol Label Switching (MPLS) Architecture ATM**, 22-24 June 1998. ICATM-98., 1998 1st IEEE International Conference on, Pages: 6 - 15

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse N Alexander whose telephone number is (703) 305-8709. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jna3

A handwritten signature in black ink, appearing to read 'Frank Duong', with a stylized flourish at the end.

FRANK DUONG
PRIMARY EXAMINER